**In the Remarks**

The Applicants have added new Claims 24 – 28. New Claim 24 depends from Claim 15 and recites that drawing is carried out at low draw rate, the polyester yarn has a strength from a stress-strain curve of at least 3 cN/dtex and a residual extension of at least 42%. New Claim 25 recites the presence of certain structural units, as do Claims 26 and 27. New Claim 28 recites additional components to the filaments. Support may be found in the first full paragraph of page 5 of the Specification and elsewhere. Examination on the merits is respectfully requested.

The Applicants have amended Claim 1 to recite that the yarn also has a CV value of the continuous shrinkage in the yarn lengthwise direction of no more than 4%. Support may be found at page 8, line 26 of the Applicants' Specification. Claim 15 has been amended to recite that the drawing is at a low draw rate and that the yarn is continuously subjected to a heat-treatment and a relaxation heat treatment at a relaxation factor of 6 to 20%, using a heated roll at a temperature of 105 - 180°C by plural laps of the yarn. Support for the amendment to Claim 15 may be found in original Claim 23 and the Examples.

The Applicants acknowledge the 35 U.S.C. §112 rejection of Claims 1 – 14. The Applicants respectfully submit that those claims do indeed particularly point out and distinctly claim the subject matter which the Applicants regard as the invention. Simply put, the Applicants' Claim 1, for example, recites a polyester multifilament yarn. The multifilament yarn is comprised of polytrimethylene terephthalate filaments. Those of ordinary skill in the art are readily capable of discerning what polytrimethylene terephthalate filaments are. This is a simple matter readily understood by those of ordinary skill in the art. No imagination is necessary to determine this.

Similarly, the yarn is described as having particular physical characteristics. The Applicants provide exact descriptions on how to make those determinations in their Specification. It is a simple

matter for one of ordinary skill in the art to take these measurements and see whether polyester multiple filament yarn made by another comprising polytrimethylene terephthalate filaments falls within the claimed ranges. One of ordinary skill in the art can easily determine this. The measurements may fall within the ranges or may fall outside of the ranges, but this is easily determined with minimal experimentation.

The Applicants respectfully submit that Claims 1 – 14 provide sufficient structure to those of ordinary skill in the art to practice the invention. It is true that polyester multifilament yarn comprising polytrimethylene terephthalate filaments may have different characteristics. The yarns comprised of polytrimethylene terephthalate filaments may be made by different methodologies such that the physical characteristics are different. That does not mean that the structure recited in the Claims is not sufficient for one of ordinary skill in the art to point out and distinctly claim the subject matter which the Applicants regard as the invention.

It should be remembered that the claims must be taken in the context of the Applicants' Specification and the Applicants have provided specific descriptions, including multiple examples, to assist those of ordinary skill in the art to determine what is meant by the solicited claims. Thus, if one of ordinary skill in the art follows the guidelines provided in the Specification, the resulting polyester multifilament yarns will be in accordance with the claimed subject matter as recited in Claims 1 – 14. Thus, one of ordinary skill in the art can readily determine the metes and bounds of the subject matter of Claims 1 – 14. Withdrawal of the 35 U.S.C. §112 rejection is respectfully requested.

The Applicants' newly submitted Claims 25 – 28 provide additional information and structure for those of ordinary skill in the art in an effort to further particularly point out and distinctly claim certain subject matter of the invention.

Turning now to the merits, the Applicants acknowledge the rejection of Claims 1 – 10, 12 – 13, 15 – 19 and 22 – 23 under 35 U.S.C. §103 over Fujimoto. Before discussing Fujimoto in detail, the Applicants note that it is important to consider the subject matter of Claim 15, which is a method claim. That method claim sets forth fundamental steps that lead to the polyester multifilament yarn as recited in Claim 1. Thus, the method of this invention comprises the following basic steps A, B, C and D:

A. A polyester yarn is produced by a direct-spinning-drawing process, wherein polytrimethylene terephthalate of intrinsic viscosity ($\eta$) of at least 0.7 is melt spun and drawn.

B. The yarn is taken-up at a speed of at least 2000 n/min and, without winding up, subjected to drawing at a low draw rate and continuously subjected to a heat-treatment and a relaxation heat treatment at a relaxation factor of 6 to 20%.

C. A heated roll of surface roughness 1.5S – 8S at 105 - 180°C is used when the yarn is subjected to drawing, heat-treatment and continuous relaxation heat treatment, with plural laps/turns of the yarn around the roll. Under those steps, drawing is carried out with the heated roll and the heat-treatment is carried out by winding the yarn around the heated roll several times. Further, the relaxation heat treatment is carried out after separation of the yarn from the heated roll.

D. Then, the yarn is subjected to interlacing treatment to make its CF value 1-30, and wound up as a package.

Thus, it is important in this invention to manufacture polyester yarn having the steps of taking up at high speed (such as 2000 m/min or more of take-up speed), drawing at low draw rate (such as 1.9 times or less of draw rate), heat-treating, and carrying out a relaxation heat treatment at the rate of high relaxation (such as 6 – 20% of rates of relaxation). It is thereby possible to produce an excellent polyester yarn, which is defined by Claim 1, especially specified by a minimum value of

a differential Young's modulus at 3 – 10% extension is no more than 6.6 cN/dtex by utilizing the above-described steps.

The process described above is neither disclosed, taught nor suggested by the process conditions disclosed by Fujimoto. For example, the claimed process as recited in Claim 15 uses a hot roll at a temperature of 105 - 180°C having a surface roughness of 1.5 – 8S and an interlacing treatment to make the CF value of 1 – 30 between the relaxation heat treatment and winding up as a package.

In sharp contrast, Fujimoto fails to teach or suggest a process having the combination of a high-speed take-up step, drawing at a low draw rate and relaxation heat treatment at the rate of high relaxation. For example, Examples 2 and 4 of Fujimoto disclose filament production carried out by taking-up at relative high speed (2000 m/min) and drawing at relative low draw rate (2.0 times). However, the relaxation rate is low (3% and 4%) in relation to the heat treatment.

Comparative Example 5 in Fujimoto was carried out by taking-up at high speed (4000 m/min), drawing at low draw rate (1.3 times), and a high relaxation rate (8%) for the relaxation heat treatment. A polyester yarn could not be obtained by such a process. This is explained as "showed drastic yarn breakage, and could not be wound." in paragraph No. 0089 of Fujimoto.

Thus, the process of this invention which takes-up at high speed, draws at a low draw rate, and carries out relaxation heat treatment at a high relaxation rate, is not disclosed, taught or suggested by Fujimoto.

In the Fujimoto process, for heat treatment, the heated roll shown as the 2$^{nd}$ roll 12 was used. However, Fujimoto does not disclose if the surface of the heated roll is rough or smooth. In fact, the Applicants respectfully submit that one of ordinary skill in the art would presume that the heated roll in Fujimoto has a smooth surface because the Examples in Fujimoto were carried out by a

process having a high draw rate (such as 3.2 times as in Example 6). It is technically quite difficult to draw using a heated roll with a rough surface. Furthermore, Fujimoto does not disclose, teach or suggest the interlacing treatment after the heated roll (the 2nd roll 12) of heat treatment.

As a consequence of the differences in the process steps of Fujimoto relative to the process steps of independent Claim 15, for example, the Applicants respectfully submit that the physical characteristics recited in the Applicants' independent Claim 1, for example, would not likely be present in the yarns of Fujimoto. This is an important fact because the essence of the rejection of Claims 1 – 10, 12 – 13, 15 – 19 and 22 – 23 is set forth in the middle of page 5 of the Official Action that states that, although admitting that Fujimoto does not explicitly teach the claimed properties, it would be reasonable to presume that the properties are inherent to Fujimoto.

It must be remembered that a rejection based on inherency must mean that the physical characteristics that are not explicitly disclosed by the reference must necessarily be present in the prior art. The above discussion with respect to the differences between the Fujimoto process and the Applicants' process would lead one of ordinary skill in the art to conclude that the claimed properties would inherently likely be different from those of Fujimoto, not necessarily the same. As a consequence, the Applicants respectfully submit that it is impermissible to base the rejection of Claims 1 – 10, 12 – 13, 15 – 19 and 22 – 23 on Fujimoto. Fujimoto fails to provide evidence that the admittedly not disclosed claimed properties would inherently be present. The evidence on the record clearly demonstrates differences between the two processes of producing filaments and resulting yarns and, as a consequence, there can be no inherency sufficient to utilize Fujimoto as a valid reference against those claims. The Applicants accordingly respectfully request withdrawal of the rejection.

The Applicants acknowledge the rejection of Claim 14 under 35 U.S.C. §103 over the hypothetical combination of Matsuo with Fujimoto. The Applicants respectfully submit that hypothetically combining Matsuo with Fujimoto fails to provide additional teachings that would cure the deficiencies set forth above with respect to Fujimoto taken alone. Accordingly, the Applicants respectfully request withdrawal of the rejection of Claim 14.

The Applicants acknowledge the rejection of Claims 15 – 19 and 21 – 23 over the hypothetical combination of Schippers with Fujimoto. Schippers discloses a high-speed spinning process for synthetic yarn, such as the feed system 7 which includes a means for lowering the tension of running yarn in the process. Feed system 7 is shown in Figs. 1 and 2 and has roll 9 and roll 10 as the feed roll for a yarn tension reduction means.

The yarn looping angle alpha around these rolls is at least 90° and, more specifically, is between about 90° and 270°. That is, the number of yarn laps or turns around the roll 9 or roll 10 is less than 1 lap/turn. In order to cause yarn slippage around the roll surface, wherein the roll rotates at a higher speed than the yarn velocity, the surface of the roll should have a rough texture. In order to reduce yarn tension, the Schippers roll rotates to achieve a surface velocity of higher speed than yarn velocity, and can cause the yarn to slip around the roll.

The feed system 7 described in Figs. 1, 2, 11 and 14 of Schippers shows that the yarn is taken up by roll 9 and then roll 10, wherein yarn drawing does not occur between roll 9 and roll 10, and no heat treatment is carried out around the rolls 9 and 10. The yarn cannot be drawn between the two rolls 9 and 10 with a rough surface, wherein yarn slipping is caused around the rolls. Moreover, the Applicants believe that both rolls 9 and 10 of Schippers are not heated depends on the description in Schippers.

In the process shown in Fig. 15 of Schippers, the feed system containing one roll 9 as a yarn tension reducing means, the roll 9 rotates at high speed so that its surface velocity is higher than yarn speed, and yarn slippage is caused around the roll surface, and the yarn tension of downstream becomes reduced. Thus, Schippers teaches that the roll rotates at a higher speed than the yarn velocity, and causes yarn slippage around the roll surface, as a means for lowering yarn tension. In order to cause the yarn to slip around the roll surface, the roll must have rough surface, and yarn looping angle alpha around the roll must be between about 90° and 270°, i.e., less than 1 lap/turn.

When the roll with a rough surface is applied as a yarn tension reducing means, the yarn laps/turns less than 1 lap/turn. The roll with rough surface is not applied to the drawing roll nor heat treatment roll, wherein yarn laps/turns several times around the drawing and heat treatment roll.

Schippers does not teach or suggest a roll applied to draw or provide heat treatment, because Schippers explains: "In any event, it should be less than 360°, and preferably less than 270°" related to the yarn looping angle (see Column 3, lines 8 – 10). Therefore, it would be quite difficult to apply the rough surface roll described in Schippers to the drawing and heat treatment roll of Fujimoto. As a consequence, the Applicants respectfully submit that one of ordinary skill in the art would not attempt to hypothetically combine the rough surface roll of Schippers with the process/apparatus of Fujimoto. Withdrawal of the rejection of Claims 15 – 19 and 21 – 23 is respectfully requested.

In light of the foregoing, the Applicants respectfully submit that the entire Application is now in condition for allowance, which is respectfully requested.

Respectfully submitted,

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